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RAW SEQUENCE LISTING PATENT APPLICATION: US/10/031,496A DATE: 05/13/2003 TIME: 16:19:32

Input Set : A:\PCT99-45.txt

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3 <110 > APPLICANT: Adney, William S.
              Decker, Stephen R.
      5
              Lantz-McCarter, Suzanne
              Baker, John O.
      1
              Vinzant, Todd B.
              Nieves, Rafael A.
             Himmel, Michael E.
     11 - 120 - TITLE OF INVENTION: CELLOBIOHYDROLASE REDUCED GLYCOSYLATION VARIANTS: CBHIN45A;
              CBHIN270A; AND CBHIN384A
     14 - 130 - FILE FEFERENCE: HIMMEL NEEL IR# 99-45
C--> 16 <140> CURRENT APPLICATION NUMBER: US/10/031,496A
C--> 17 <141> CURRENT FILING DATE: 2003-05-06
     19 160 NUMBEF OF SEQ ID NOS: 4
     21 -170 > SOFTWARE: PatentIn Ver. 2.0
     23 -210 - SEQ ID NO: 1
     24 - 211 / LENGTH: 496
     05 - 0125 TYPE: PRT
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   62 Pro Arg Asp Leu Lys Phe Ile Asn Gly Gln Ala Asn Val Glu Gly Trp
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PATENT APPLICATION: US/10/031,496A TIME: 16:19:32

DATE: 05/13/2003

Input Set : A:\PCT99-45.txt

65 66	Glu	Pro	Ser 195	Ser	Ā. n	Asn	Ala	Asn 200	Thr	Gly	He	Gly	Gly 205	His	Gly	Ser
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114		450	1				455)				460				His
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135 13€		Ile	Asp 35		Asn	Trp	Arg	Trp 40		His	Ala	Thr	Asn 45		Ser	Thr

PATENT APPLICATION: US/10/031,496A TIME: 16:19:32

DATE: 05/13/2003

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1					165					170					175	
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1				130					186					190		
160	Glu	$F(r)\ominus$	Ser	Ser	Ash	Asr.	Ala	Asstr	Thr	Gly	$\text{Il} \in$	Gly	$\operatorname{GL} \Sigma$	His	Gly	Ser
100			195					200					205			
110	Cys	Cys	Ser	Glu	Met	Asp	$11 \oplus$	Tr_{Y}	Glu	Ala	Asr.	Ser	$\text{Il}\in$	Ser	Glu	Alā
169		210					215					210				
171	Leu	Thr	Pro	His	Pro	Cys	Thr	Tr.r	Val	G1y	Glr	Glu	I1e	Оуг	Glu	$\operatorname{Gl} \Sigma$
17.	225					230					235					240
174	Asp	Gly	Cys	Gly	Gly	Trr	Tyr	Ser	Азр	Asr.	Ara	Tyr	GLY	$\operatorname{Gl}_{\Sigma}$	Thr	Cys
175					∴45					250					255	
177	Asp	E'ro	Asp	Gly	Cys	Asp	Trp	$A\varepsilon r;$	Pro	Tyr	Arg	Leu	Gly	Ala	Thr	$\mathbb{S} \in \mathbf{r}$
178				260					265					270		
180	Phe	Tyr	Gly	Pro	Gly	Ser	3er	$Ph\epsilon$	Thr	Leu	Asp	Thr	Thr	Lys	Lys	Leu
1 ⊱ 1			275					$\mathbb{R}^{\mathcal{E}(t)}$					285			
183	Thr	Val	Val	Thr	Glr	Phe	Glu	Thir	Ser	Gly	Alá	11e	Asn	Arg	Tyr	Tyr
1 F 4		290					295					300				
186	Vāl	Gln	Asn	Gly	Vál	Thr	Phe	Glrı	Gln	Pro	Asrı	A.l.a	Glu	Leu	Gly	Ser
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DATE: 05/13/2003 PATENT APPLICATION: US/10/031,496A TIME: 15:19:32

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	4 + 5					470					475					480
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	Gln	Lys	.ys	Ser	$\cdot \in r$	Gly	Gly	Thr	Cys	Thir	Gln	Gln	Thr	Gly	3er	Val
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21,230	\cdots 1	116	Asp	$A\lambda a$	Asn	Trp	Arg	Trp	Thr	His	Ala	Thr	Asn	Ser	Ser	Thr
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		Tvr	Gly	Val	Thr	Thr	Ser	Gly	Asn	Ser	Leu	Ser	Ile	Glv	Ph⊕	Vál
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	Thr	Glra	Ser	Alā		Lvs	Asn	Val	Glv	Ala	Ara	Leu	Tur	Leu	Met	Ala
248				100		-1 -			105				- , -	110		
	Ser	Asp	Thr	Thr	Tvr	Gln	Glu	Phe	Thr	Leu	Leu	Glv	Asn		Ph∈	Ser
.:51		1	115		1	-		12:0				1	125			
	Phe	Asr		Asr	Val	Ser	Glr	Leu	Pro	Cvs	Glv	Len		Glv	Ala	Leu
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	Tvr		Val	Ser	Met	Asp		Asp	Glv	Glv	Val		LVS	Tvr	Pro	Thr
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		Thr	Ala	Glv	λla		Tur	Gly	Thr	Glv		CVS	Asn	Ser	Gln	
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DATE: 05/13/2003

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335	Vāl		Asp	20	Ser	Gly	Gly	Thr Trp	Cys 25	10 Thr	Gln	Gln	Thr	Gly	15 Ser	Val
335 336	Vāl	Ile	Asp 35	Ala	Ser Asn	Gly Trp	Gly Arg	Thr Trp 40	Cys 25 Thr	10 Thr	Gln Ala	Gln Thr	Thr Asn	Gly 30 Ser	15 Ser Ser	Val Thr
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335 336 338 339	Val Asn	Ile Cys 50	Asp 35 Tyr	Ala Asp	Ser Asn Gly	Gly Trp Asn	Gly Arg Thr 55	Thr Trp 40 Trp	Cys 25 Thr	10 Thr His Ser	Gln Ala Thr	Gln Thr Leu	Thr Asn 45 Cys	Gly 30 Ser Pro	15 Ser Ser Asp	Val Thr Asn
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335 336 338 339 341 342	Val Asn Glu	Ile Cys 50 Thr	Asp 35 Tyr Cys	Ala Asp Ala	Ser Asn Gly Lys	Gly Trp Asn Asn 70	Gly Arg Thr 55 Cys	Thr Trp 40 Trp Cys	Cys 25 Thr Ser Leu	10 Thr His Ser Asp	Gln Ala Thr Gly	Gln Thr Leu 60 Ala	Thr Asn 45 Cys Ala	Gly 30 Ser Pro Tyr	15 Ser Ser Asp Ala Phe	Val Thr Asn Ser
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335 336 336 339 341 342 344 345 347 348	Val Asn Glu 65 Thr	Ile Cys 50 Thr Tyr	Asp 35 Tyr Cys Gly Ser	Ala Asp Ala Val Ala 100	Ser Asn Gly Lys Thr 85 Gln	Gly Trp Asn Asn 70 Thr	Gly Arg Thr 55 Cys Ser Asn	Thr Trp 40 Trp Cys Gly Val	Cys 25 Thr Ser Leu Asn Gly 105	10 Thr His Ser Asp Ser 90 Ala	Gln Ala Thr Gly 75 Leu Arg	Gln Thr Leu 60 Ala Ser Leu	Thr Asn 45 Cys Ala Ile Tyr	Gly 30 Ser Pro Tyr Gly	15 Ser Ser Asp Ala Phe 95 Met	Val Thr Asn Ser 80 Val Ala
335 336 338 339 341 342 344 345 347 348 350	Val Asn Glu 65 Thr	Ile Cys 50 Thr Tyr	Asp 35 Tyr Cys Gly Ser	Ala Asp Ala Val Ala 100	Ser Asn Gly Lys Thr 85 Gln	Gly Trp Asn Asn 70 Thr	Gly Arg Thr 55 Cys Ser Asn	Thr Trp 40 Trp Cys Gly Val	Cys 25 Thr Ser Leu Asn Gly 105	10 Thr His Ser Asp Ser 90 Ala	Gln Ala Thr Gly 75 Leu Arg	Gln Thr Leu 60 Ala Ser Leu	Thr Asn 45 Cys Ala Ile Tyr	Gly 30 Ser Pro Tyr Gly	15 Ser Ser Asp Ala Phe 95 Met	Val Thr Asn Ser 80 Val Ala
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335 336 338 339 341 342 344 345 347 348 350 351 353	Val Asn Glu 65 Thr Thr Ser	Cys 50 Thr Tyr Gln Asp	Asp 35 Tyr Cys Gly Ser Thr 115	Ala Asp Ala Val Ala 100 Thr	Ser Asn Gly Lys Thr 85 Gln Tyr	Gly Trp Asn Asn 70 Thr Lys Gln	Gly Arg Thr 55 Cys Ser Asn Glu	Thr Trp 40 Trp Cys Gly Val Phe 120	Cys 25 Thr Ser Leu Asn Gly 105 Thr	10 Thr His Ser Asp Ser 90 Ala Leu	Gln Ala Thr Gly 75 Leu Arg	Gln Thr Leu 60 Ala Ser Leu Gly	Thr Asn 45 Cys Ala Ile Tyr Asn	Gly 30 Ser Pro Tyr Gly Leu 110 Glu	15 Ser Ser Asp Ala Phe 95 Met	Val Thr Asn Ser 80 Val Ala Ser
335 336 338 339 341 342 344 345 347 348 350 351 353 354	Val Asn Glu 65 Thr Thr Ser	Cys 50 Thr Tyr Gln Asp Asp 130	Asp 35 Tyr Cys Gly Ser Thr 115 Val	Ala Asp Ala Val Ala 100 Thr	Ser Asn Gly Lys Thr 85 Gln Tyr	Gly Trp Asn 70 Thr Lys Gln Ser	Gly Arg Thr 55 Cys Ser Asn Glu Gln 135	Thr Trp 40 Trp Cys Gly Val Phe 120 Leu	Cys 25 Thr Ser Leu Asn Gly 105 Thr	Thr His Ser Asp Ser 90 Ala Leu Cys	Gln Ala Thr Gly 75 Leu Arg Leu Gly	Gln Thr Leu 60 Ala Ser Leu Gly Leu 140	Thr Asn 45 Cys Ala Ile Tyr Asn 125 Asn	Gly 30 Ser Pro Tyr Gly Leu 110 Glu	15 Ser Ser Asp Ala Phe 95 Met Phe	Val Thr Asn Ser 80 Val Ala Ser Leu

RAW SEQUENCE LISTING ERROR SUMMARY FATENT APPLICATION: US/10/031,496A

TATE: 05/13/2003 TIME: 16:19:33

Input Set : A:\PCT99-45.txt

Catput Set: N:\CRF4\05132003\J031496A.raw

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

```
Seq#:1; Line(s) 2,3,4,5,6,^{7},5,9,10,13,14,15,16,17,18,19,20,21,22,23,24,25
\text{Seq} #:1; \ \text{Line}(3) \ \ 26,27,18,23,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45
Seq#:1; Line(s) 40,47,78,49,50,51,52,13,54,55,56,57,50,59,60,61,42,63,64,65
Seq#:1; Lire(s) 60,67,68,60,70,71,72,65,74,75,76,77,75,79,80,31,%,83,84,85
Seq#:1; Line(s) 80,87,88,84,90,91,92,95,94,95,96,94,98,99,100,101,102,103
Seq#:1; Line(s) 1.4,100,100,107,148,109,110,111,112,113,114,115,116,117,118
Seq#:1; Line(s) 119,120,121,1.2,123
Seg#:2; Line(s) 1.4,125,126,1.7,1.8,140,131,132,133,134,135,136,1:7,138,140
Seq#:3; Line(s) 141,143,143,144,149,146,147,143,149,190,151,152,193,154,155
Seq#:2; Line(s) 1/6,155,169,160,161,162,163,164,165,166,167,163,169,170,171
Seq#:2; Line(s) 1/3,1/4,17,1/6,1/ ,1/3,179,180,181,182,183,184,185,186,183
Seq#:2; Line(s) 1x3,1+0,141,122,1+0,194,195,195,195,197,198,199,200,201,202,203
Seq#:D; Line(s) 204,205,206,207,200,200,210,211,211,213,214,215, 16,217,218
Seq#:1; Line(s) \mathbb{C}[14,2..0,3.21,2.72,2..3]
Seq#:3; Line(s) 0.74,235,026,0.7,378,230,031,030,033,034,235,057,038,040,041
Seq#:F; Line(s) .45,244,.40,247,348,349,350,354,352,355,254,355,356,358,359
Seq#:5; Line(s) 260,261,262,263,264,265,266,267,268,269,270,271,273,274,275
Seg#:0; Line(s) 276,277,278,079,080,181,082,183,184,085,086,188,089,090,191
Seq#:0; Line(s) 09.,193,194,195,096,197,098,199,300,301,301,303,304,305,306
Seq#:3; Line(s) 307,308,309,310,311,312,313,314,315,316,317,318,319,320,321
Seq#:3; Line(s) 3.22,323
Seq#:4; Line(s) 324,305,326,307,308,330,331,330,334,335,337,338,340,341,345
Seq#:4; Line(s) 344,346,347,348,349,350,381,350,353,354,355,356,358,359,360
Seq#:4; Line(s) 361,362,363,364,565,366,367,368,369,370,371,373,374,375,376
Seq#:4; Line(s) 377,378,379,380,381,382,383,384,385,386,388,389,390,391,392
Seq#:4; Line(s) 393,394,395,396,397,398,399,400,401,402,403,404,405,406,407
Seq#:4; Line(s) 408,409,410,411,412,413,414,415,416,417,418,419,420
```

VERIFICATION SUMMARY

DATE: 05/13/2003 PATENT APPLICATION: US/10/031,496A TIME: 16:19:33

Input Set : A:\PCT99-45.txt

Output Set: N:\CRF4\05132003\J031496A.raw

L:16 M:270 C: Current Application Number differs, Replaced Application Number

L:17 M:271 C: Current Filing Date differs, Replaced Current Filing Date